

WHAT IS CLAIMED IS:

1. A catalytic reforming process having a moving bed of reforming catalyst passing through at least one reforming zone at a flow rate to produce a net hydrogen product stream containing carbon monoxide wherein the process comprises
5 determining a concentration of the carbon monoxide in the net hydrogen product stream and reducing the flow rate of the reforming catalyst passing through the reforming zone to thereby reduce the concentration of carbon monoxide in the net hydrogen product stream.
2. The process of claim 1 wherein the catalytic reforming process comprises three
10 reforming zones.
3. The process of claim 1 wherein the catalytic reforming process comprises four reforming zones.
4. The process of claim 1 wherein the reforming catalyst is spherical.
5. The process of claim 1 wherein the net hydrogen product stream having a
15 reduced concentration of carbon monoxide contains from about 0.1 to about 20 vppm carbon monoxide.
6. The process of claim 1 wherein a reduced catalyst circulation rate is in the range from about 10 g/hr/m³ feed to about 300 g/hr/m³ feed.

7. The process of claim 1 wherein the reforming zone is operated at conditions including a pressure from about 270 kPa (25 psig) to about 1480 kPa (200 psig), a temperature from about 450°C (842°F) to about 550°C (1022°F), a hydrogen to hydrocarbon mole ratio from about 1 to about 5 and a liquid hourly space velocity
5 from about 0.5 to about 4 hr⁻¹.

8. A catalytic reforming process having a moving bed of reforming catalyst passing through four reforming zones at a flow rate to produce a net hydrogen product stream containing carbon monoxide wherein the process comprises determining a concentration of the carbon monoxide in the net hydrogen product stream and reducing
10 the flow rate of the reforming catalyst through the reforming zones to thereby reduce the carbon monoxide concentration to less than about 20 vppm in the net hydrogen product stream.

9. The process of claim 8 wherein the reforming catalyst is spherical.

10. The process of claim 8 wherein net hydrogen product stream having a reduced
15 concentration of carbon monoxide contains from about 0.1 to about 10 vppm carbon monoxide.

11. The process of claim 8 wherein a reduced catalyst circulation rate is in the range from about 10 g/hr/m³ feed to about 300 g/hr/m³ feed.

12. The process of claim 8 wherein the reforming zone is operated at conditions including a pressure from about 270 kPa (25 psig) to about 1480 kPa (200 psig), a temperature from about 450°C (842°F) to about 550°C (1022°F), a hydrogen to hydrocarbon mole ratio from about 1 to about 5 and a liquid hourly space velocity
5 from about 0.5 to about 4 hr⁻¹.

13. A catalytic reforming process having a moving bed of spherical reforming catalyst passing through four reforming zones at a flow rate to produce a net hydrogen product stream containing carbon monoxide in an amount greater than about 20 vppm wherein the process comprises determining a concentration of the carbon monoxide in
10 the net hydrogen product stream and reducing the flow rate of the spherical reforming catalyst through the reforming zones to a range from about 10 g/hr./m³ feed to about 300 g/hr./m³ feed to thereby reduce the carbon monoxide concentration to less than about 5 vppm in the net hydrogen product stream.

14. A catalytic reforming process having a moving bed of reforming catalyst
15 passing through at least one reforming zone at a flow rate to produce a net hydrogen product stream containing carbon monoxide wherein the process comprises determining a concentration of the carbon monoxide in the net hydrogen product stream and reducing the moisture content of the reforming catalyst passing through the reforming zone to thereby reduce the concentration of carbon monoxide in the net
20 hydrogen product stream.